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2 **ABSTRACT**

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An implementation of a technology, described herein, for transmitting compressed network transport-layer-protocol headers in a speedy, efficient, inferentially synchronized, and robust manner. An implementation, described herein, models the transmission of compressed headers to the congestion procedure of the network transport-layer protocol (e.g., TCP's). Doing so, the sender of the compressed headers can *infer* whether the receiver correctly received them. Unlike the slow direct synchronization employed by conventional schemes, this implementation of the present claimed invention *inferentially synchronizes* by modeling after the congestion procedure of the network transport-layer protocol. This is inherently faster than direct synchronization. Since the implementation performs well over both noiseless and noisy links, it is particularly suited to use over wireless communications channels. This abstract itself is not intended to limit the scope of this patent. The scope of the present invention is pointed out in the appending claims.

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